REMARKS

Entry of the foregoing amendments, and reexamination and reconsideration of the subject application, pursuant to and consistent with 37 C.F.R. § 1.104 and § 1.112, and in light of the following remarks, are respectfully requested.

The examiner's attention to this application as set forth in the previous action is gratefully appreciated.

Amendment

Claim 1 has been amended to correct a typographical error introduced by the previous amendment. Claims 1 and 10 have been amended to recite that the surface coating consists essentially of the cured polymer with the antimicrobial and that the antimicrobial compound is anchored to substantially prevented its migration; as is discussed below in more detail; these claims are also amended to recite that the non-woven substrate is suitable for use as a scrubber. No new matter is added. Anchoring of the antimicrobial compound is disclosed at least at page eight (lines 18-20) of the application.

Same Invention Double Patenting Rejection under 35 U.S.C. 101

The rejection of claims 1-18 hereunder as claiming the same invention as prior U.S. Pat. No. 6,299,520 is respectfully traversed.

As noted in the action, this rejection requires claiming identical subject matter as in an issued patent. The present claim 1 requires only a single antimicrobial compound, whereas claim 1 of the '520 patent requires a "mixture of antimicrobial compounds" *as well as* abrasive particles. Similarly for the method claim 10 of this application and method claim 12 of the '520 patent, the present claim requires only a single antimicrobial compound while the prior patent requires a mixture of antimicrobial compounds and abrasive particles. When the scope of the claims is not identical, there is no same invention double patenting. *In re Goodman*, 29 USPQ2d 2010, 2015 (Fed. Cir. 1993) (and citing *In re Vogel*, 164 USPQ 619, 621-22 (CCPA 1970)). Thus, as pointed out in *Vogel*, if one could infringe one of the claims without infringing the other claim then there is no

"same invention" double patenting; in *Vogel* the Court held that "meat" was not the same as "pork" and hence there was no "same invention" double patenting. Because the present claims are not identical with those of the '520 patent, this rejection should now be withdrawn.

Paragraph 11 of the Office action states that the claims of Applicant's prior '520 patent "fully anticipate" the presently claimed subject matter. As the present application is a CIP of the application that matured into the '520 patent, it is assumed that the statement was intended to mean that the same invention is claimed in both rather than an obviousness-type double patent rejection. If the Office's intention is otherwise, clarification is requested.

Rejections under 35 U.S.C. 102

I. The rejection of claims 1 and 19 as anticipated by Cueman (*et al.*) is respectfully traversed. As now amended, claim 1 requires that the surface of the article have a cured coating incorporating an antimicrobial present during the curing.

The rejection alleges that Cueman discloses an antimicrobial agent "incorporated into a polymeric resin binder coating which is then cured on the substrate surface." Cueman actually discloses that the *surface* resin is a thermoplastic and not a cured (e.g., thermosetting) resin.

> When a dual layer coating is desired, a thermosetting material is applied to the substrate first. The process steps in this case are: . . . ; incorporating an effective amount of an antimicrobial biocidal or biostatic substance into at least one of preselected uncured powdered thermosetting or thermoplastic materials; electro-statically applying a first coating of a negatively charged thermosetting resin to the substrate; applying a second layer of positively charged thermoplastic material containing an effective amount of an antimicrobial biocidal or biostatic substance to the coating of thermosetting material by electrostatic means; heating the substrate and coatings [and then holding to cure].

Col. 2, ln. 48-60 (emphases added); *see also* col. 4, ln. 16-23. The only disclosure in Cueman is of a cured resin as an inner layer; a thermoplastic (non-cured) layer is the outermost layer. In contrast, as now amended, the "consisting

essentially of" language is intended to exclude an outer layer lacking the essential cured resin. Accordingly, claims 1 and 19 are not anticipated by this reference.

Cueman discloses that either or both of the layers (thermoset and thermoplastic) can contain a biocidal or biostatic compound (e.g., col. 4, ln. 23-26). However, the whole intent of Cueman is that the

> antimicrobial agent will migrate through the polymer to the surface from the amorphous zones of the polymer until equilibrium of the agent's internal vapor pressure is reached. If the antimicrobial substance on the surface of the coating is removed by friction or other means, more antimicrobial agent will move to the surface until the agent's internal vapor pressure is once again at equilibrium.

Col. 4, ln. 51-59 (emphasis added). Cueman thus requires that the biocide/biostat migrate through the outer thermoplastic coating because it is expected that the antibacterial compound will be removed by contact and replenished by the underlying reservoir. Only one type of thermosetting resin is suitable for Cueman:

> The only suitable thermosetting resins for this application are thermosetting amine cured epoxies of the family diglycidylether of bisphenol-A (DGEBA), which are available from Armstrong Division of Morton Thiokol Corporation as Armstrong E-42403-4N Powder Coating.

Col. 6, ln. 13-18 (emphasis added). It is perhaps that, unlike the present invention, these thermosetting epoxy resins allow migration of the biocidal/biostatic compound upwards to the thermoplastic layer.

The claimed invention, not requiring that specific epoxy thermosetting resin, and having the cured layer as the outermost layer, thus would not have been obvious from Cueman. It is also noted that the epoxy compositions used by Cueman are applied by electrostatic, fluidized bed, or flame spraying techniques. For a non-woven substrate as claimed, these techniques are unlikely to coat the entirety of the outside surface, or if so to make a homogeneous surface not suitable for scrubbing.

II. The rejection of claims 1-4, 10-12, and 19-20 as anticipated by Hyman (*et al.*) is respectfully traversed.

Hyman discloses "[a]ctivation . . . by thoroughly distributing the activating agents throughout the compounding ingredients. For example, synthetic thermoplastics . . . have been blended with activating agents such as, antibacterial . . . agents" as part of the prior art. (Col. 1, ln. 63-70.) Similar to Cueman, Hyman discloses

> overcom[ing] the disadvantages of the prior art by providing a method for activating non-porous polymeric articles by applying the activating agents to one surface of the article so that the agents migrate throughout the body fo the article and impart an effective level of activity throughout the article and on surface to which the activating agent has not been applied.

Col. 2, ln. 56-63. The articles made by this reference have an adhesive layer containing an active, migrating agent at a concentration *in excess of that needed to provide the desired effect*, whereby the agent migrates from the layer *into the substrate* to provide the desired effect. *Id.* at ln. 63-71; claim 1 (col. 18, ln. 54-71). Hyman requires a substrate through which the activating agent (*e.g.*, antibacterial) migrates (paragraph bridging cols. 4 and 5). The substrate is one such as an olefin or polyvinyl, such as PVC (col. 5, ln. 31-44). Examples 1-59 describe making such substrates having an "activating" agent therein, and (for instance); examples 60-89 teach making laminates using such substrates.

Accordingly, Hyman does not disclose any article having a cured polymeric coating at the surface wherein the coating incorporates an antibacterial and the substrate is suitable for scrubbing.

With respect to both of these rejections, the claims are amended to recite that the curing locks the antimicrobial compound in the cured resin layer. This aspect is not disclosed in the references, and is contrary to the reference teachings requiring migration of such a compound. Therefore, withdrawal of these rejections is now believed to be warranted.

Rejections under 35 U.S.C. §103

I. The rejection of claims 6-7, 14-15, 21, and 23-24 as obvious over either of Cueman or Hyman in view of Mori is respectfully traversed.

As noted above, the present amendment to the independent claims is intended to exclude devices having an outer thermoplastic layer through which the antibacterial migrates, and instead requires that the outer layer be a cured resin having the antibacterial present when cured. As noted above in the arguments against the §102 rejections, the present claims require that the antimicrobial be essentially locked into the cured surface layer to substantially prevent its migration.

Mori discloses a foamed polyolefin including diiodomethyl-*p*-tolysulfone. That compound is an acknowledged antimicrobial. Mori specifically discloses that the "polymeric foam of the present invention is formed from a polyethylene resin as the polymer" or copolymers of ethylene and vinyl monomers or "with any other thermoplastic resin." (Col. 3, ln. 31-41.) This combination of references teaches that it is possible to provide a thermoplastic, optionally foamed as in Mori, with a biocidal or biostatic agent, including a coating as in Cueman or Hyman, but does not teach making a cured coating with the same (or similar) agent on a non-woven material suitable for scrubbing where the antimicrobial is anchored to the coating. In fact, Mori does not appear to teach any coating. The Mori composition is useful for cushioning material, toys, and building blocks (col. 3, ln. 17-18), none of which are designed for use in a solvent (aqueous) environment where microbes and food particles can become snared in the product and cause the bacterial growth shown in the figures of the present application. Because the independent claim would not have been obvious, these rejected dependent claims would not have been obvious, and so this rejection should now be withdrawn.

II. The rejection of claims 8-9, 16-18, and 22 as obvious over Hyman in view of Mori and further in view of Cameron is respectfully traversed.

Cameron discloses a batt wherein an detergent strip is adhered to a section of the batt material (col. 2, ln. 30-35) by the strip in a hot, fusible state where it cools and adheres to the surface (col. 5, ln. 65-71), and it is specifically stated that bonding of the strip using a separate adhesive binder cannot be

accomplished (col. 6, ln. 7-8). The detergent strips are dissolved during use (col. 2, ln. 45-47).

Cameron appears to make no mention of a coating, and generally is directed to impregnating an organic fiber scrubbing pad with a detergent (col. 1, ln. 40-43). As shown above, Hyman teaches a migrating antibacterial agent, and the disclosure is for coverings (col. 3, ln. 59-71) or analogous sheets, films, or laminates (*id.* to col. 4, ln. 2). Scrubbing articles, unlike coverings, have a structure that allows fluids (such as water) to pass through; the Hyman coverings, in contrast, are designed to prevent passage of fluids or vapors. While it might be suitable to include more than one antimicrobial in a composition, based on compatibility and a known spectrum of action, this combination of references fails to suggest the invention as now claimed, not least because the sodium lauryl sulfate of Cameron is not cured onto the non-woven, but rather is in a detergent stick embedded in the non-woven. Accordingly, this rejection should now be withdrawn.